



## Self-sufficient energy solutions for islands and remote communities



### Leveraging renewable resources to ensure a continuous and reliable energy supply

In islands and remote regions that rely on diesel, green hydrogen can help harness local renewable resources to support a more reliable and lower-emission energy supply. In Latin America and the Caribbean, dependence on imported diesel, climate vulnerability, and strong renewable energy potential can create favorable conditions for **hydrogen ecosystems** that strengthen energy security and support decarbonization. In Canada, similar opportunities exist in some remote and off-grid rural communities, including Indigenous and northern communities that remain partially or fully dependent on diesel for their energy needs. In these contexts, hydrogen systems can replace diesel, enhance **energy resilience and self-sufficiency**, and foster local **circular economies and economic development opportunities**.

At the international level, successful island projects demonstrate this potential:

- **BIG HIT – Orkney Islands** (Scotland): Production of hydrogen (~1.5 MW) from renewable energy (solar and tidal) for storage and use in heat, electricity, maritime transport, and mobility.
- **Mallorca** (Spain): Hydrogen production using solar PV, with applications including gas grid injection, hotel cogeneration, and fueling of buses and light vehicles.
- **Fort Island Pampus** (Netherlands): Local hydrogen production using wind, solar, and biofermentation, combined with hybrid storage (hydrogen, batteries, and thermal) to enable year-round fossil-free energy supply.



Green hydrogen: an ideal carrier to store renewable energy and supply multiple end uses





## Why green hydrogen?

- Enhances energy security, maximizes local renewable resources, and creates **greater economic value for communities** through a **circular economy** that is less exposed to global shocks..
- Enables long-duration energy storage, mitigating intermittency and ensuring reliable, continuous supply.
- Supports multi-sector applications, including heat, electricity, transport (land, maritime, rail), and port and industrial operations.
- Replaces diesel, reducing emissions, logistics costs, and exposure to price volatility.
- Offers up to 60% OPEX reduction potential, including fuel savings.
- Unlocks growth beyond **energy self-sufficiency**, creating **export opportunities** through e-methanol.

## Key project enablers:



Water availability: rainwater collection and purification, or seawater desalination.



Abundant renewable energy resources: solar, wind, biomass, geothermal, tidal energy, etc.



Diesel dependency: opportunity to reduce emissions and increase energy autonomy.



Accessibility and logistics: adequate infrastructure for transport and installation of hydrogen systems.



Economies of scale: achieved by integrating multi-sector energy demand (tourism, ports, industry and transport) and leveraging export opportunities through e-methanol.



Climate conditions: influence local energy demand and impact the performance of electrolyzers and fuel cells.

*Systems often operate at high temperatures and may require adaptations in cold climates.*



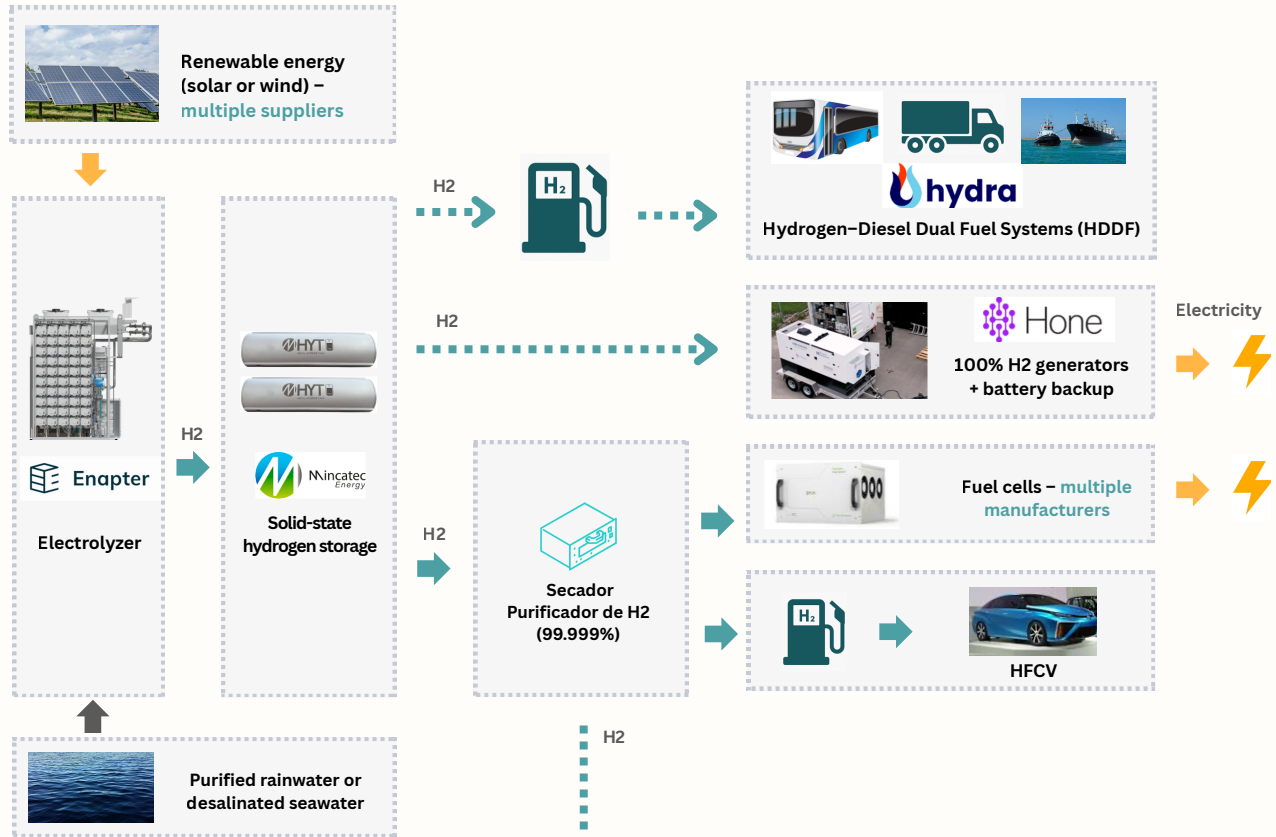
Capacity building: Integra, with its OEM and engineering partners, helps develop local capabilities for system operation and maintenance.



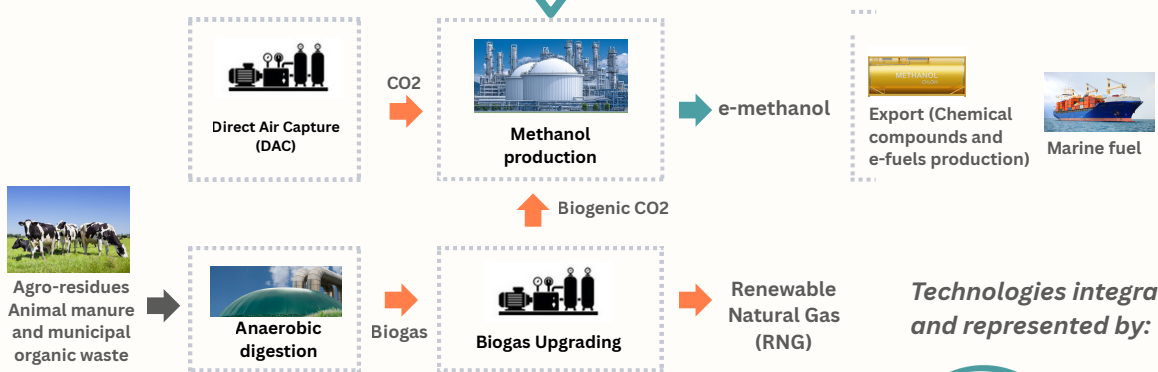
# Integrated Systems

Hydrogen ecosystems: flexible solutions using local renewable resources to provide electricity, heat, and transport energy, while creating export opportunities via e-methanol.

## A. Hydrogen system\*



## B. RNG and e-methanol\*



### Engineering Firms & EPC Partners:

In Canada:



Local (LATAM)



Technologies integrated and represented by:



\* Simplified system examples



**Integra Cleantech**

**| Leading Cleantech to Market**

Integra Cleantech is a **commercial integrator of clean technology**. We integrate complementary solutions into **complete and cost-effective systems**, solving the hydrogen "chicken-and-egg" dilemma. Integrated solutions also have the flexibility to gradually expand capacity and scope to other applications.

We provide **complementary services across the full project lifecycle**: strategic partnership development; coordination among technology manufacturers, engineering firms (EPC), and local contractors; support with funding and grants; project execution and implementation; and post-implementation follow-up, including training delivered directly by manufacturers' specialized personnel. We work to find the correct cultural fit for your needs.

Our commercial model reduces CAPEX by enabling **direct manufacturer-to-end-user invoicing**.

**Over 100 years of combined experience in clean energy, telecommunications, systems, and business development.**

Sustainable, integrated energy solutions for data centers, logistics and distribution operations, ports and airports, islands and remote locations, mobile deployments, and industrial decarbonization.

**Based in Vancouver with an extended team in LATAM.**

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